


The Mountain Weather Journal


Volume 2 *Issue 4*

25 Years of Service

What's New At JKL??????

By: Shawn B. Harley
Meteorologist-in-Charge

25 Years of Service

Greetings from your friends and neighbors at the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service Forecast Office in Jackson, Kentucky.

The summer of 2005 will go down in the record books as one of the warmest in recent memory. At Jackson, where official records began in 1981, this past summer tied with 1995 as the warmest on record. Unfortunately, the summer heat contributed to the fatalities of two children in Kentucky, one in Rockcastle County and one in Fayette County. The two children died from hyperthermia or heat stroke while they were alone in automobiles. In 2004, a child in western Kentucky also died from the effects of heat after being left unattended in an automobile. These types of tragedies are entirely preventable, and I encourage you to help spread the word about the dangers of leaving a child alone in a vehicle.

According to a study published in the July 2005 issue of Pediatrics (http://pediatrics.aappublications.org/cgi/content/full/116/1/e109) , the temperature rise that occurs within a closed vehicle on a sunny day is rapid and significant. On a sunny day, the temperature within a closed vehicle, on average, will rise 40 degrees above the outside air temperature in just 1 hour. The study also showed that leaving a crack in the windows made little difference in the final temperature. As noted in the July 2005 Pediatrics study, prevention of vehicular related hyperthermia deaths in children is straight forward, "Do not leave them in the car."

In addition to heat, another summer time hazard comes in the form of poor air quality from the build up of ground-level ozone. This can be especially troublesome for children and people with asthma or other respiratory problems. NOAA's National Weather Service and the Environmental Protection Agency (EPA) have partnered to bring air quality forecast guidance to the eastern United States, including all of eastern Kentucky. Hour-by-hour ozone air quality forecasts can be obtained directly from our website at www.weather.gov/jacksonky. Once you are at this site use the clickable map in the center of the page to obtain a 7 day weather forecast for your location. On the webpage with the detailed 7 day forecast click on "Air Quality Forecasts" in the "Additional Forecasts and Information" box. This will provide you with an hour by hour ground level ozone forecast for your specific location.

The air quality forecasts can be interpreted using the following information from the EPA:

Air Quality Index Level	Air Quality Index Category	8 Hour concentration (parts per billion)	1 Hour Concentration (parts per billion)
0-50	Good	0-64	-
51-100	Moderate	65-84	-
101-150	Unhealthy for Sensitive Groups	85-104	125-164
151-200	Unhealthy	105-124	165-204
201-300	Very Unhealthy	125-374	205-404
301-400	Hazardous	>374	405-504
401-500	Hazardous		505-604

For more information on the air quality forecasts check out the following webpage:
http://www.nws.noaa.gov/ost/air_quality/

As always, we would appreciate hearing from you. If you have any comments regarding the newsletter, NOAA Weather Radio All Hazards, our webpage, or any other service we provide please give us a call, send us an email, or drop us a note. We are constantly striving to improve our products and services and your feedback is important.

Aviation and Winter Weather

By Dusty Harbage
Lead Forecaster

Winter weather presents challenges to those that wish to fly as well as those that are just trying to get to school, work, or even the market. During the last 10 years, there have been over 30 accidents on takeoff as a result of wing contamination by snow, frost, and ice. Recent recommendations from the Federal Aviation Administration (FAA) are that pilots should "feel" the aircraft wings and other surfaces to assure there is no frozen wing contamination.

Frost and snow often accumulate on wings and other surfaces when an aircraft is parked outside on the ramp. The disrupted airflow over these surfaces from even minor accumulations of frost or snow can result in the inability to become airborne or to continue flying if the aircraft does become airborne.

When frost or snow is present on the airframe, the pilot has two choices: go home or spend some extra time prior to flight completely removing the frost and snow from the aircraft. From an aerodynamic viewpoint, there is no such thing as "a little ice."

The bad news is that underneath the snow there may be a layer of ice that also needs to be removed. Removing frost and ice is trickier than loose snow, but just as critical. The best and easiest way to prevent contamination is to park the aircraft in a hangar.

No hangar available? No problem. There are several hangar-in-a-can "solutions" available: Polypropylene antifreeze is pink in color, not harmful if swallowed, and is available at RV, automotive or marine stores and is used for winterizing portable water systems. Placed in a small garden sprayer it works quite well, especially if heated to room temperature. Automotive windshield deicer in a spray can is inexpensive, can be purchased at gas stations and department stores, and can be quite effective in removing small amounts of frost and ice.

Climate

By: Jeff Carico
Hydrometeorological Technician

Frost/Freeze information

The National Weather Service issues two products of public interest each fall. These products are the **Frost Advisory** and the **Freeze Warning**. A **Frost Advisory** is issued when widespread frost is expected. Frost happens when water droplets freeze to surface objects. Temperatures do not necessarily need to be 32 degrees or less for this to happen. Frost can occur with readings as warm as 38 degrees. A Frost Advisory can be issued many times in the course of a growing season. A **Freeze Warning** is issued when temperatures are expected to be below 32 degrees over a widespread area. This product is issued until a killing freeze occurs. A killing freeze happens when temperatures hit 28 degrees or lower.

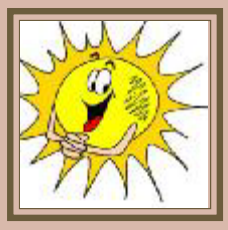
Across eastern Kentucky, the median date for dropping to 32 degrees generally happens around the middle to later part of October. Although sheltered valley locations generally see 32 degrees a week or so earlier on average. For readings of 28 degrees, this typically occurs in late October and early November.

Here are some median dates as well as earliest and latest dates for selected Cooperative Weather Observer sites and airports for hitting 32 degrees and median dates for dipping to 28 degrees:

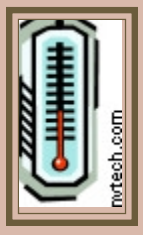
	32 degree median Date	32 degrees Early/Late	28 degrees Median Date
Barboursville	10/22	10/03 / 11/13	11/04
Baxter	10/23	10/03 / 11/13	11/06
Famers	10/17	09/24 / 11/08	10/25
Grayhawk	10/07	09/22 / 10/22	10/18
Heidelberg	10/19	10/03 / 11/04	10/29
Hyden	10/22	10/03 / 11/04	11/04
Manchester	10/14	09/23 / 11/07	10/20
Middlesboro	10/18	10/03/ 11/14	11/03
Monticello	10/19	10/03 / 11/13	10/28
Mt. Sterling	10/21	10/03 / 11/09	11/03
Mt. Vernon	10/13	10/02 / 11/04	11/03
Paintsville	10/22	10/03 / 12/03	11/03
Somerset	10/15	09/27 / 11/05	10/25
Stearns	10/07	09/22 / 10/24	10/24
West Liberty	10/06	09/22 / 11/04	10/24
Williamsburg	10/19	09/30 / 11/13	10/27
WFO Jackson	10/26	10/23 / 11/13	11/07
London-Corbin Airport	10/13	09/23 / 11/13	10/28

Storm of the Season

By: Phil Hysell
Warning Coordination Meteorologist



Through the end of August, the National Weather Service in Jackson recorded 193 events of damaging winds, large hail, flash floods, and tornadoes across eastern Kentucky in 2005. While this may seem like a large number, it is a 45% reduction in the number of severe weather reports we received through the end of August in 2004. So, with the limited number of severe weather events to discuss in this article, I thought I would remove the word "storm" from the title of this article and discuss "the season". The biggest weather story in eastern Kentucky this summer wasn't severe weather, it was the unusually warm temperatures and below normal precipitation.



First, let's discuss the unusually warm temperatures we've experienced. Here at the Weather Service Office in Jackson, we tied our warmest meteorological summer (June-August) on record. The average temperature this summer was 76.6 degrees, which tied the summer of 1995 as the warmest on record. In fact, Jackson has not experienced a month of below normal temperatures since May. It was so warm this summer that we measured the hottest temperature in nearly 10 years on the 12th of August when the mercury soared to 97 degrees. The last time temperatures were this warm was August 31st, 1995 when the high was 99 degrees. Much like the difference in severe weather, the heat was in sharp contrast to 2004 when Jackson tied its coldest summer on record!

London also experienced the above normal temperatures with a summer average temperature of 75.9 degrees which is 1.9 degrees above normal. The warmest month was August when the monthly average temperature was 77.3 degrees. This made August 2005 the 3rd warmest August on record in London.

Perhaps an even bigger story than the unusually warm temperatures has been the lack of rainfall across eastern Kentucky. This deficit was made more noticeable due to the fact Jackson had recorded four consecutive years of above normal precipitation prior to 2005, including 2004 which was the second wettest year on record. For the summer of 2005, Jackson recorded 10.78 inches of rain, which is 2.61 inches below normal. This made 2005 the 5th driest summer on record in Jackson. This dry spell has been quite lengthy as the last time Jackson had a month of above normal precipitation was April.

Despite the fact that London received above normal precipitation in August (3.93 inches for the month), the summer as a whole was below normal with only 10.25 inches of rain falling, which is 1.74 inches below normal. Most of the deficit occurred in June and July when the two month rainfall deficit was 2.31 inches.

Will this trend of above normal temperatures and below normal precipitation continue into this winter? The official forecast from the Climate Prediction Center for December through February calls for above normal temperatures and equal chances of above or below normal precipitation.

Winter Safety Tips

By: Phil Hysell
Warning Coordination Meteorologist

Each year, dozens of Americans die due to exposure to cold. Add to that number, vehicle accidents and fatalities, fires due to dangerous use of heaters and other winter weather fatalities and you have a significant threat. A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snow and cold temperatures. People can become trapped at home or in a car, without utilities or other assistance. The aftermath of a winter storm can have an impact on a community or region for days, weeks or even months.

While the past few winters have been relatively mild, dangerous winter weather is still no stranger to Kentucky. The February 2003 Ice Storm paralyzed much of central Kentucky, and the January 1994 winter storm brought ice to some areas and 6 to 26 inches of snow across the rest of the state. This resulted in the closure of state, interstate, and federal roads, leaving thousands of motorists stranded. The National Weather Service would like you to prepare you

Winter Safety Tips (Continued)

By: Phil Hysell
Warning Coordination Meteorologist

and your family for this potentially life-threatening hazard.

- Be prepared to survive on your own for at least three days. Assemble a disaster supply kit. Be sure to include winter specific items including rock salt to melt ice on walkways, sand to improve traction, and snow shovels. Keep a stock of non-perishable food and extra drinking water.
- Prepare for isolation in your home. Maintain several days supply of medicine, water, and food that needs no refrigeration. Have sufficient heating fuel, as regular fuel sources may be cut off. Have emergency heating equipment and fuel (a gas fireplace or wood burning stove or fireplace) so you can keep at least one room in your home livable. Be sure the room is well ventilated. If a thermostat controls your furnace and your electricity is cut off by a storm, you will need emergency heat.
- Keep fire extinguishers on hand and know how to use them
- Never burn charcoal indoors.
- Have your vehicle(s) winterized before the winter storm season. Keeping your vehicle in good condition will decrease your chance of being stranded in cold weather. Have a mechanic check your battery, antifreeze, wipers and windshield washer fluid, ignition system, thermostat, lights, flashing hazard lights, exhaust system, heater, brakes, defroster, and oil. Install good winter tires.
- Put together a separate disaster supply kit for the trunk of each vehicle used by members of your household. This kit should include: Blankets; rain gear and extra sets of dry clothing; plastic bags for sanitation; several bottles of water; high energy 'munchies'; a small shovel; jumper cables; a first aid kit; a flash light with extra batteries; cell phone; and a brightly colored cloth to tie to the antenna.
- In your home and car have a battery powered NOAA Weather Radio All-Hazards.
- Know the difference between a Winter Storm Watch, Warning, and Advisory. A watch is issued 12 - 48 hours before the onset of severe winter weather. A warning means life-threatening severe winter conditions have begun or will begin within 24 hours. Act now! An advisory means winter weather conditions are expected to cause significant inconveniences and may be hazardous. If you are cautious, these situations should not be life threatening.
- Don't forget about your pets! Make sure they have food, water and shelter.

On The Web

By: Tony Edwards
General Forecaster

The National Weather Service strives to continually improve its products and services for the benefit of you, the taxpayer. One new product being offered is the RIDGE (Radar Integrated Display with Geospatial Elements) radar imagery. This is a new way to display imagery from the NWS NEXRAD Doppler Radars and can be accessed from a link on our homepage http://www.weather.gov/jacksonky or from the RIDGE radar site itself (http://www.srh.noaa.gov/ridge/).

The new display not only produces a better image, but also provides additional information to help the user better define where they are located. Elements such as highways, rivers, county boundaries, and city locations can be overlaid onto the image along with topography to help you really hone in on where you are and where the precipitation is falling. An additional new feature is the ability to overlay the latest Severe Thunderstorm, Tornado, Flash Flood, or Special Marine Warnings issued by the National Weather Service.

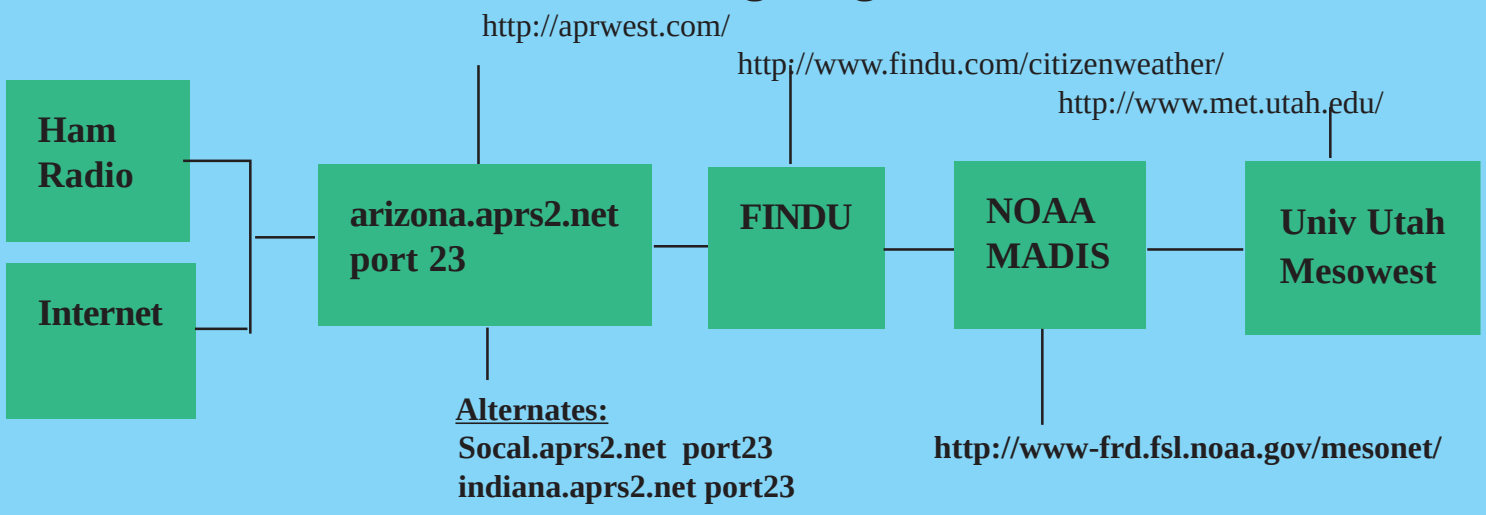
The RIDGE radar also adds the ability to see not only the reflectivity imagery (where precipitation is falling) but also velocity images (how strong and in what direction the wind is blowing aloft). The Base Velocity imagery shows how fast and in what direction the winds are blowing aloft in relation to the radar's location. The Storm-Relative Velocity imagery will show you how fast and in what direction the winds aloft are blowing in relation to the average storm-relative speed and direction. For more information on how to read the different imagery and what it can be used for, visit the WSR-88D Radar Frequently Asked Questions (FAQ) website at http://www.srh.noaa.gov/ridge/doppleru/radinfo.html.

Tech Tips

By: John Jacobson
Lead Forecaster

Do you have a home weather station and also have internet access? If you do, you can become part of the Citizens Weather Observer Program. Your observations would be sent into a network of weather observations. These observations could then be displayed at all of the NWS offices in the US and they could also be used to create the initial conditions that weather models use to create forecasts. In order to become part of the Citizens Weather Observer Program, you would need to do two things. First you must go to the following website: http://www.findu.com/citizenweather/signup.html . At this site you need to click on **form** and it will take you to this site: http://www.findu.com/citizenweather/cw_form.html . Just fill out the form with your name, email address, nearby town, state, zip code and elevation in meters. You will then receive an email with your CW number. Next you need to have some software. There are commercial packages available or else you can go to the following site: http://www.fiu.edu/orgs/w4ehw/CWOP-Main.html and download some freeware. You can go to the bottom of the page and click on download the software and also download all of the instructions on how to get you online. Having additional weather observations available to us would be invaluable. It can help us issue more accurate advisories and forecasts as well. We would love to see your data on our screens here at the Jackson Weather Office.

Citizen Weather Observing Program -- Data Flow



Get the latest forecast and warning information on NOAA's Weather Radio All Hazards

News From The COOP

By: David Stamper
Data Acquisition program Manager

J. D. ROGERS 2005 HOLM AWARD RECIPIENT

I am very pleased to announce that Mr. J.D. Rogers was selected as one of the John Campanius Holm Award Winners for 2005. The Holm award is NOAA's second most prestigious cooperative observer award with only 25 presented each year around the country.

The John Campanius Holm award was created to honor Cooperative Observers for outstanding accomplishments in the field of meteorological observations. It is named for a Lutheran minister, who was the first person known to have taken systematic weather observations in the American Colonies. Reverend Holm made weather observations, without the aid of instruments, in 1644 and 1645 near the present site of Wilmington, Delaware. His son later had these observations published.

Pictured with J.D. is Shawn B. Harley, Meteorologist In Charge of the weather forecast office in Jackson. Shawn and myself presented the award to J.D. , at Shearers Buffet in Monticello , KY.

J.D. has been the observer at the Monticello 3NE station since March 1, 1985. J.D. understands the importance of timely and accurate weather reports. J.D. probably learned that during his 20 plus years as an Air Force weather forecaster. Yes, J.D. has 40+ years in the weather business.

Congratulations J.D.

http://www.weather.gov/jacksonky

The Refrigerator Door

By: Anthony Richey
General Forecaster

October 2005 will mark the start of the first, and hopefully annual, Jackson weather office weather drawing contest. Students in grades kindergarten through the fifth grade who attend schools within our county warning area will be eligible to participate.

The primary purpose of the contest is to give the bright young minds of eastern Kentucky the opportunity to pursue their interest in the weather. We hope this project will not only be fun for those who participate, but educational as well.

One winning drawing will be selected from each grade level in each of the 33 counties serviced by the Jackson National Weather Service forecast office. Students who submit winning drawings will be awarded a certificate of participation along with an age appropiate packet which will contain weather-related safety information.

Each week **all** of the weather drawings received by the Jackson weather office will be scanned and posted on our webpage. The name of the contest page will be "The Refrigerator Door". Each **winning** drawing will be posted on a separate page along with the student's name, school, and homeroom teacher's name.

If all goes well we'll make this an annual event. I encourage everyone who is interested to participate. Good luck! If you are intersted in participating in this contest, pleae contact Anthony Richey by calling (606) 666-2560 or by email at: anthony.richey@noaa.gov. The deadline for submissions is October 31, 2005.

If your agency is interested in hosting a spotter training, contact Phil Hysell @ (606) 666-2560, Ext. 726

Hydrology

By: Britt Westergard
Service Hydrologist

New Advanced Hydrologic Prediction Service (AHPS) Web Pages

As a part of the National Weather Service's ongoing efforts to improve access to hydrologic information to meet specific user needs, some changes to the national and local Advanced Hydrologic Prediction Service (AHPS) web pages have recently been implemented, while some are planned for the near future. The following is a brief overview of the improvements; please visit http://www.nws.noaa.gov/ahps/summary/summary.php for more information.

The national AHPS web page can be accessed at www.weather.gov by clicking on the tab labeled "Rivers". Additions to the national web page include the ability to display only points in flood (by clicking on the appropriate color in the legend) and a new color scheme that is consistent for all AHPS web pages.

Changes to the local "Rivers & Lakes AHPS" web pages will be more apparent to frequent users. The main local AHPS page can be found by going to our main page at www.weather.gov/jacksonky and clicking on the "Rivers & Lakes" or "AHPS" link on the blue banner on the left side of the screen. The new main page has several improvements, including a compass to navigate to adjacent areas, as well as color coded river selection drop-down menus. Also, the location type drop-down menu allows the user to select only points with just hydrographs available or only points with both probabilistic and hydrograph information available.

The most noteworthy changes to the local web pages are in the display of current and forecast river stage information on the "Hydrograph" page. The first phase of improvements includes new tabs for ease of naviagtion, as well as friendlier buttons for viewing tabular data and hydrograph information and for navigating back to the map page.

The second phase of improvements to the hydrograph page, to be implemented in the near future, will be the more significant phase. The user can control the scale on the hydrograph or create a printer-friendly version of the hydrograph. The new hydrograph will have a label on any crests with the crest stage and will include the time that the river forecast was created.

Look for these changes on the AHPS web pages nationwide.

Photo by: Henry
(Last name unknown)

Did You Know????

The seven colors of the rainbow are: Orange, Red, Yellow, Green, Blue, Indigo and Violet.

About 500 Meteorites hit the earth each year. Most of them go unrecorded falling into oceans, deserts and other uninhabited areas.

Nearly 97% of the world's water is salty or otherwise undrinkable. Another 2% is locked in ice caps and glaciers. That leaves just 1% for all of humanity's needs.

Water expands by 9% when it freezes. This makes frozen water (ice) lighter than liquid water, which is why it floats.

www.weather.gov/jacksonky

You are cordially invited to Join NOAA's National Weather Service Office in Jackson, Kentucky as we celebrate our

25th Year Anniversary

of providing Forecasts and Warnings to Eastern Kentucky.

Place: 1329 Airport Rd.
Jackson, Kentucky
Date: October 05, 2005
Time: 12 p.m. - 4 p.m.

AGENDA

12:00 – 12:30 p.m.

Color Guard Presentation…….....Cadet Leadership Education Program
Welcome …….....Shawn Harley, Meteorologist-in-Charge
Introduction of Guests …….....Shawn Harley, Meteorologist-in-Charge
Presentation of StormReady Certification to ……Shawn Harley, Meteorologist-in-Charge
Breathitt County & Phil Hysell, Warning Coordination Met.
Presentation of Recognition to Breathitt Co…….Shawn Harley, Meteorologist-in-Charge
Extension Office & Phil Hysell, Warning Coordination Met.
Presentation of Holm Award……. …….....Shawn B. Harley, Meteorologist-in-Charge
& David Stamper, Data Acquisition Program Mgr.
Recognition of Earhart Family …….....Hazard Community College
Presentation of Old Timer's Award…….....Shawn B. Harley, Meteorologist-in-Charge

Patriotic Music will be provided by Jackson Independent School Band

12:30 – 4:00 p.m.:

Special Events & Booths:

Weather Balloon Demonstration ……....Bonnie Terrizzi, National Weather Service
Fire Weather Pi-ball Demonstration…….……...John Jacobson, National Weather Service
Lightning Presentation ……...…….…….....Eric Thomas, East KY Science Center
Information Booth …….…….....American Red Cross
Home Evacuation Plan/Survival Kit ……..…….....Martha Yount, Breathitt County Extension Office
Enviroscape & River Erosion Model ……..……....Christie Cook, Johnson Co. Conservation District
Tornado Simulation Trailer……..……....Bob Dixon
Tornado Boxes …….. .....Phil Hysell, National Weather Service
Tours of the National Weather Service Office…... .Various Staff Members of the National Weather Service

Door Prizes and Refreshments will be provided

Kid's Corner

By: Bonnie Terrizzi
Hydrometeorological Technician

NOAA, NWS and the Web

NOAA, the National Oceanic and Atmospheric Administration, is the parent agency of the National Weather Service and some other related science agencies such as the National Ocean Service, and National Marine Fisheries Services.

A large part of NOAA's mission is with education. There is a wealth of information on the various NOAA web sites designed for all levels of education. This newsletter will give you several links on various NOAA and National Weather Service educational resources which can be used for your own research or as a resource for teachers from middle school through high school levels.

So here are the links to investigate: http://www.oar.noaa.gov/k12/index.html with student activity books and teacher material in PDF files. Explore hurricanes, storms, and the oceans with projects and guided reference material.

Next is the National Weather Service's online weather school. Found at: http://www.srh.noaa.gov/srh/jetstream/ a basic course in meteorology is available for anyone with an interest in meteorology.

Additional educational materials are at: http://www.education.noaa.gov where both student and teacher resources can be found. Information on undergraduate and graduate opportunities can be found here as well.

Interactive presentations for younger kids are available from the NWS at: http://www.weather.gov/om/reachout/kidspage.shtml You can find weather coloring books and other materials here that are age appropriate.

As technology changes, more and more information becomes open to everyone, creating nearly endless opportunities to explore and learn about the world around us. We hope you take some time to browse through these educational links.

Interested in visiting NOAA's National Weather Service Office in Jackson,??? Have your teacher contact Phil Hysell, WCM at (606) 666-2560, ext. 726 and schedule a tour for your class.